**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 2 | STRAND: Measurement and Geometry | **SUB-STRAND:** Mass 2 | **WORKING MATHEMATICALLY:** MA1-1WM MA1-4WM MA1-3WM |
| OUTCOMES: **MA1-12MG**  | **Measures, records, compares and estimates the masses of objects using uniform informal units** |
| **CONTENT:**  | **Compare the masses of objects using balance scales*** recognise that mass is conserved, eg the mass of a lump of plasticine / blocks remains constant regardless of the shape it is moulded into or whether it is divided up into smaller pieces .
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Can students find two object that are approximately the same mass?
* By weighing two objects can students describe whether an object is a lot heavier than another object by the movement of the balance beam.
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| WARM UP / DRILL | * Twin bags
* Students are each given a bag containing a mass. Students find a partner who has a bag with about the same mass as theirs by hefting. Check using balance beam.
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  |  |
| QUALITY TEACHING ELEMENTS | **INTELLECTUAL QUALITY** | **QUALITY LEARNING ENVIRONMENT** | **SIGNIFICANCE** |
| * Deep knowledge
* Deep understanding
* Problematic knowledge
* Higher-order thinking
* Metalanguage
* Substantive communication
 | * Explicit quality criteria
* Engagement
* High expectations
* Social support
* Students’ self-regulation
* Student direction
 | * Background knowledge
* Cultural knowledge
* Knowledge integration
* Inclusivity
* Connectedness
* Narrative
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| RESOURCES |  |

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Revise how to use an equal arm balance.* Introduce activities and explain what to do and how to record.
* Students will work in groups with an equal arm balance to complete assigned tasks.
* Students will record and discuss findings.
* Students discuss difficulties using equal arm balance, material or items.
* Whole class discussion on the conservation of mass.
* Students will find out how many identical units will balance a given mass.
* Students suggest appropriate units to measure and explain why some unit are better than others.
* Students have a recording book to record findings and activities.
* Opportunities should be provided for free play using balance beams.
 | LEARNING SEQUENCERemediationES1  | * Students take turns to be blindfolded. Teacher or another student places an object or container in each hand of the blindfolded student. Objects should be obviously light or obviously heavy objects e.g. piece of string, paperclip, large stone, large bottle of liquid. Students state which hand is holding the heavier object or container. Students watching make a visual estimate of which is the heavier object.
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| LEARNING SEQUENCES1 | * **Conservation**
* Provide students with lumps of plasticine/ playdough. Have students divide each lump onto two pieces of the same mass. Students check by using a balance. Each student rolls one piece into a sausage and the other into a ball. Ask students which one will be lighter/heavier? Students experiment with changing the shape of the plasticine and weighing.
* **Connect the Blocks**
* Students built 4 towers of ten connecting blocks. Place two towers on each side of a balance beam. Students separate the blocks on one side and describes what happens.
* Students can experiment with the same process using things like a box of dominos, a bag of marbles, etc.
* Assessment:

Can the student describe / demonstrate what will happen to the balance beam if two new boxes of pencils are weighed when one box is opened and separated.  |
| LEARNING SEQUENCEExtension Early S2 | * Are things that are big always heavy ?
* Discuss things that are big and heavy - big and light
* Find an object that is smaller than pencil case but heavier.
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| **EVALUATION & REFLECTION** | **Student Engagement: Achievement of Outcomes:****Resources: Follow Up:**  |